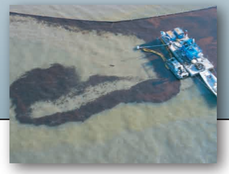
Restoration-Based Focus in Cooperative Damage Assessments Can Lead To Expedited Assessment Process: The Westchester Oil Spill Example



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ON NOVEMBER 28, 2000, THE M/V WESTCHESTER SPILLED APPROXIMATELY 550,000 GALLONS OF CRUDE OIL INTO THE MISSISSIPPI RIVER. State and federal agency personnel and the responsible party (RP) responded to the spill and observed indications of biological injury and lost recreational opportunities. Several thousand acres of Mississippi River and coastal surface waters, various shoreline habitats, and associated fauna were exposed to black oil or sheen. Much of the oil became trapped in the rip-rap revetment which allowed for a much more efficient recovery of oil than is typical for spills. Commercial and recreational traffic on the lower Mississippi River was halted on the morning of November 29, 2000, effectively restricting use of down river recreational sites until the river was reopened on December 1, 2000.

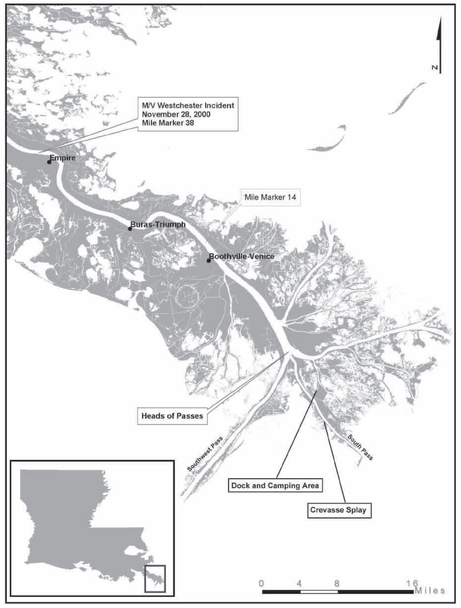
Assessment Process

Despite the large spill volume, the Trustees (which also includes the Louisiana Department of Wildlife and Fisheries, Department of Natural Resources, Oil Spill Coordinators Office, and DOI through the USFWS) suggested that an expedited injury assessment approach would be appropriate for the Westchester NRDA because of the availability of cost-effective restoration options in the vicinity. Using the information gathered during the response phase of the spill, the Trustees identified injury categories for evaluation in the assessment. These categories included ecological services for exposed habitats (riverine vegetation, sandflats, delta marsh, and rip-rap), birds, aquatic fauna, and lost recreational use. The Trustees conducted a preliminary injury scoping exercise using a model to estimate bird and aquatic faunal losses, a Habitat Equivalency Analysis (HEA) to estimate habitat service losses, and benefits transfer to estimate the recreational lost use claim.

The Trustees developed estimates for HEA injury parameters based upon observations of the extent and nature of oiling, previous experience on the recovery of oiled habitats, and input from local Mississippi River experts. Protective assumptions were used in developing a preliminary scoping estimate of habitat injury, without conducting additional analysis or detailed studies. The term "protective assumption" indicates that the value of the parameter in question would tend to favor the resource and the public's interest, leading to an upper-end estimate of how much injury occurred and how much restoration is required. The Trustees' initial estimates for habitat injuries were 3.7 discounted service acre years (DSAYS) of freshwater vegetation services, 2.3 DSAYS of rip-rap services, 0.8 DSAYS of sandflat services, and 2.0 acres of delta marsh services. Since cost-effective restoration alternatives existed, the preliminary habitat injury estimates were used by mutual agreement rather than conducting further assessment work to refine these estimates. This approach provided cost savings for the RP as well as restoration that the Trustees were confident adequately compensates the public.

The Trustees used a model to estimate that 582 birds were killed and 19.396 kilograms of aquatic fauna (direct kill and production forgone) were lost. Although initially skeptical about the model, the RP recognized that the cost of jointly reviewing the model and reaching a consensus on possible modifications would dwarf potential savings in restoration costs from a reduction in the injury estimate. Therefore, the initial model results were used in the final analysis.

The assessment of recreational lost use relied on literature of comparable situations where pollution affected recreational trips. A scoping estimate of the value per trip was developed by using the highest value of affected trips from the relevant literature. The Trustees assumed that the navigation restriction resulted in a complete loss of recreational use in the Mississippi River delta, and estimated up to 655 angler days and 804 hunter days were affected. These protective assumptions resulted in an upper-end estimate of the recreational injury of $122,060. The RP suggested using a different approach to evaluating the recreational injury and scaling restoration however ultimately it was agreed that the cost of implementing a different assessment approach was not justifiable, given the Trustees' relatively low scoping loss estimate.



Restoration Planning

Concurrently with the assessment, efforts were made to identify appropriate types of restoration for the ecological and recreational lost use injuries. Due to the effective clean up and given the expected rapid natural recovery (due in part to the dynamic nature of the Mississippi River), the Trustees concluded that no active primary restoration was required. However, the Trustees determined that the interim losses required compensatory restoration.

Considering the relatively modest level of injuries, restoration implementation costs, and other factors, the Trustees sought to identify a single restoration project for all ecological injuries. Trustees concluded that marsh creation would be the best match for the restoration alternative selection criteria and other considerations, such as combating Louisiana marsh loss. With this approach, injury to non-marsh habitats needed to be "converted" to marsh services for scaling. Very protective assumptions were used in assigning trade-off ratios (10:1 for rip-rap to marsh, for example), precluding the need to obtain experts, perform intensive literature reviews, or conduct studies to determine more realistic values.

The Trustees and RP worked together to identify potential projects. The RP contacted a refuge manager for the Louisiana Department of Wildlife and Fisheries who suggested creating a splay marsh in an area they manage. Such splays are created in the Mississippi River delta by dredging a cut through the bank of one of the multiple river passes so that river-borne sediments settle out creating small delta-lobes that naturally vegetate. This type of restoration is very cost-effective and has an excellent track record of success, and was selected as the preferred project. The Trustees and RP representatives worked together to develop performance criteria and a monitoring program. The RP implemented the project in September 2003 and is conducting monitoring with Trustee oversight.

Construction of a dock intended to increase recreational usage of a wildlife management area was suggested by the same refuge manager and selected to address the recreational lost use. The estimated cost of implementation by the Trustees would match or exceed the $122,060 value of the loss. However, the RP implemented this project in September 2003 for less than this amount.

Discussion

This case illustrates some of the benefits possible in a restoration-focused cooperative NRDA. The greatest benefit was the savings in the duration and cost of an assessment because of the willingness of all parties to forgo field studies beyond the collection of ephemeral data (such as water samples and bird surveys) and documentation of the exposure of habitats to oil that occurred during the active response phase. The use of protective assumptions made Trustees' restoration decisions defensible to the public. The recreational loss estimate required only a review of relevant literature and consultation with local agency personnel familiar with use of the area. The assessment was conducted efficiently, with the preliminary scoping estimates for the injuries presented to the RP within six months of the incident. Forgoing more detailed assessment work represented a significant cost savings to the RP.

The early focus on restoration was the most important factor in making this NRDA so successful. It quickly became apparent that very cost-effective restoration alternatives were available, thereby making the refinement of the initial injury estimates unnecessary. Both of the projects used to compensate for the spill injuries were identified within seven months of the incident, and officially selected after considering public comment in a final Damage Assessment and Restoration Plan issued less than six months later. The rapidity of the assessment process helped keep overall transaction costs low.

Establishing trust among the parties was necessary to keep the cooperative process working. One example of this was the assessment of injury to aquatic fauna. During the incident, many thousands of dead fish washed ashore on the western bank of the river. The Trustees observed that the fish were almost exclusively offshore species, not normally found in the river, typical of by-catch from shrimp boats. The Trustees quickly decided not to enumerate the dead fish, judging that the dead fish were unlikely to be spill-related, instead using a model to estimate this injury. This decision resulted in a much lower estimate of injury to aquatic fauna than would have been made by counting the dead fish, which helped establish trust that the Trustees were not trying to unfairly maximize the claim.

Another factor in making this assessment successful was the recognition of the constraints on each side. The agreement to use preliminary scoping injury estimates based on protective assumptions, without refinement, illustrates this point. The RP was aware that the Trustees would need to defend the restoration as being adequate to compensate the public for the injuries to natural resources and services. At the same time, the Trustees were aware that the RP was sensitive to how the injury results were portrayed and carefully explained that the injury estimates were almost certain to be higher than actually occurred, but were agreed to by both sides in the interest of reaching a quick, cost-effective settlement.

Conclusions

Essential Factors leading to a successful expedited NRDA for the Westchester Oil Spill:

- Commitment to cooperate between Trustees and the RP as well as among Trustees themselves;
- Willingness to critically evaluate the need to collect site specific data and conduct studies beyond the ephemeral data collected during the response, under the circumstances that existed (cost-effective restoration opportunities, previous experience, relevant literature);
- Use of protective assumptions in models and other assessment approaches;
- Level of knowledge and experience among Trustee and RP representatives in the NRDA process, the awareness of each other's limitations and expectations, and the local environment's recovery from previous spills; and
- Maintaining focus on the restoration goal rather than focusing on the assessment process and trying to evaluate every potential injury to a near degree of certainty.

More detailed information, including how to get access to documents in the Administrative Record is available in the final Damage Assessment and Restoration Plan which can be downloaded from: http://www.darp.noaa.gov/publicat.htm.